Reported Early Syphilis Infections in Kansas Between 01-01-2001 and 12-31-2001

Kansas Department of Health and Environment
Bureau of Epidemiology and Disease Prevention

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Executive Summary

This report summarizes the efforts of the HIV/STD Section of the Bureau of Epidemiology and Disease Prevention to control and prevent early syphilis (infections less than 12 months duration) in Kansas for 2001. Forty-four cases of early syphilis were reported from January 1, 2001 to December 31, 2001. This is a three fold increase over the 15 cases reported the previous year from January 1, 2000 to December 31, 2000.

From 1991 to 2000 reported cases of early syphilis had been declining in Kansas. The increase of early syphilis can be attributed to two outbreaks within Topeka and Wichita. The Topeka outbreak accounted for 19 cases or 43% of all early syphilis in Kansas for 2001 and revolved around commercial sex workers and methamphetamine/cocaine usage. The Wichita outbreak, which consisted of 10 cases or 23% of all early syphilis, was linked to crack (cocaine) usage and sex for drugs/money.

African Americans and Hispanics accounted for 52% and 27% of reported early syphilis cases respectively in 2001. However, African Americans and Hispanics each only comprise 6% of the state's population. Historically minorities in Kansas and nationwide have been disproportionately impacted by syphilis. This may reflect reporting bias or reflect differences in core syphilis prevalence and social networks.

Kansas reported two cases of presumptive congenital syphilis in 2001. One woman was treated late in her pregnancy for syphilis and another was not treated for syphilis until after she delivered. Both of the newborns met the CDC case definition for presumptive congenital syphilis, but neither had any signs or symptoms of disease.

Disease Intervention Specialists (DIS) used both conventional and targeted outreach techniques to intervene in early syphilis transmission in 2001. Twenty (45%) of all the new early syphilis cases in Kansas for 2001 were discovered through DIS intervention activities. This is even more relevant when considering that 11 (55%) of these 20 cases were infectious (primary and secondary) syphilis. Additionally, 41 individuals at risk for developing syphilis were preventatively treated. Preventative treatment is an aggressive treatment schedule recommended by CDC to minimize the spread of disease and is one of the steps recommended in the syphilis elimination program.

No new syphilis cases have been reported in relation to the two outbreaks as of January 2, 2002. The outbreaks were stopped by aggressive actions of local DIS with assistance from DIS in other areas of

the state. The overall efforts were enhanced by creative interventions including targeted outreach in communities where the outbreaks arose. Interventions were further enhanced by the large number of individuals preventatively treated for syphilis. The initial nature of this outbreak is similar to what has occurred in other areas of the country in the last two years; however, the relatively quick recognition of the potential of the outbreaks in conjunction with aggressive and persistent disease intervention activities contributed significantly in stopping the outbreaks.

Background

While accounting for only a small proportion (44/9127) of cases among the reportable bacterial sexually transmitted diseases (STDs) in Kansas, syphilis remains an important entity because of its potential for elimination as well as its role as a co-factor for HIV infection and transmission. Syphilis is also an important factor in infant health because congenitally acquired syphilis can result in severe infant morbidity and mortality.

The HIV/STD Section of the Bureau of Epidemiology and Disease Prevention (BEDP) policy is to intervene in every early syphilis case (infections less than 12 months duration) in Kansas. Disease Intervention Specialists (DIS) perform partner counseling and referral services (PCRS) for all persons reported with early syphilis. PCRS is a confidential interview with a patient that includes education about the disease, elicitation of partners and at risk individuals, prevention messages and referral of sexual partners. While making every effort to intervene in the risks that lead to the spread of syphilis, DIS investigate everyone in a syphilis case's social network who engages in at risk behaviors such as illicit drug use and sex for drugs/money. Intervening in social networks is called "clustering" and the individuals investigated within social networks are designated as suspects or associates depending on their relationship to the case. In 2001, as in past years, DIS have been able to detect new early syphilis cases from clustering. Syphilis outbreak intervention also require DIS to go beyond conventional techniques and includes outreach activities such as focused screenings and educational presentations.

Early syphilis is an aggregate of all infections that occur less than one year before diagnosis. It includes primary, secondary and early latent (infection within the last 12 months and no symptoms at the time of diagnosis) syphilis cases. Syphilis is usually transmissible (infectious) only when symptoms are present during its primary and secondary stages. Symptoms usually occur within ten days to six months after sexual contact with an infected person. Intervention at this time reduces the risk of spread to new sex partners and therefore limits the expansion of disease in the community.

Nationally, the Centers for Disease Control has set a goal for syphilis elimination to reduce the total number of primary and secondary syphilis cases to 0.4 cases per 100,000* by 2005. The case rate for primary and secondary syphilis in calender year 2001 for Kansas was 1.0 case per 100,000*.

From 1991 to 2000 reported cases of early syphilis had been declining in Kansas. In 2001, 44 cases of early syphilis were reported. This is a three fold increase compared to the 15 cases reported

in 2000. The increase of early syphilis can be attributed to two outbreaks that have accounted for 29 cases (64%) of all the early syphilis reported in Kansas in 2001. The outbreaks were tied to small areas within Topeka and Wichita. The Topeka outbreak which has accounted for 19 cases (43%) of all early syphilis in Kansas for 2001 revolved around commercial sex workers and methamphetamine/cocaine usage. The Wichita outbreak consisted of 10 early syphilis cases linked to crack (cocaine) usage and sex for drugs/money. Twenty-six of the 44 early syphilis cases were tested for HIV and all tested HIV negative.

* total population

DIS have used both conventional and outreach techniques to intervene in early syphilis transmission in 2001 with great success. Twenty (45%) of all the new early syphilis cases in Kansas for 2001 were discovered through DIS intervention activities. This is even more relevant when considering that 11 of these 20 cases were infectious (primary and secondary) syphilis and a larger public health threat than latent cases.

Ninety days is the maximum period for signs and symptom of syphilis to appear after sexual contact with an infected individual. Individuals at risk for developing syphilis because of sexual contact with a case within 90 days of their exam are referred for preventative treatment. This is an aggressive treatment schedule recommended by CDC to minimize the spread of disease and is one of the steps recommended in the syphilis elimination program. Forty-one individuals were given preventative treatment for syphilis in Kansas during 2001; thirty-one were sex partners in the 90 day period and 10 were suspects or associates.

Topeka Outbreak

There were 19 early syphilis cases reported in Topeka in 2001 compared to 3 in 2000. Thirteen of the 19 cases were primary or secondary syphilis. Additionally, 8 of these early cases were found through intensive DIS intervention activities. Sixty sexual partners and suspects/associates were initiated for field investigation in this outbreak. Field investigations are probes to identify and locate sexual partners and suspects/associates for medical examination and/or treatment. It was discovered during the investigation that eight cases were commercial sex workers or had been a sexual partner of a commercial sex worker. Through intensive DIS intervention efforts 18 individuals were preventatively treated for syphilis. Conventional disease intervention activities were utilized in Topeka in combination with community outreach. From investigations and interviews of cases and their contacts it was established that the residences of cases and their contacts were not in any specific area in Topeka however the place where they hung-out (spent most of their free time) was one specific area in Topeka. DIS went door to door in this small area* of downtown Topeka offering testing for syphilis and HIV. This approach targeted the individuals in the geographic area who might not seek out testing and/or treatment. Twenty-one individuals in the area were tested for syphilis and HIV, none of these tests were positive. This included a test from a commercial sex worker associated with a known case. The next stage of the outreach consisted of syphilis education and testing at the county jail. Since many of

the commercial sex workers involved in the Topeka outbreak had been incarcerated at the county jail recently for drug related offenses and/or prostitution, DIS went to the county jail on two occasions for both education and testing. Thirty-three females were tested for syphilis and twenty-nine for HIV; all were negative for HIV and syphilis. These outreach activities generated a great deal of knowledge and concern within the affected community demonstrated by calls and volunteers for exams in the weeks following the outreach activities. Additionally, local laboratories were contacted and notified of the syphilis outbreak and arrangements were made for the lab to call all reactive serologies for syphilis immediately to the local DIS. There have been no new cases of early syphilis associated with this social network for over two months.

* See Map on page 11

Wichita Outbreak

The Wichita outbreak consisted of 10 early syphilis cases linked to crack (cocaine) usage and sex for drugs/money. All 10 cases were reported between June and September 2001*. The outbreak was tied to a small area in northeast Wichita**. The index case in this outbreak was diagnosed and treated at the Beloit Juvenile Detention Facility. Five of these 10 cases had symptoms of primary and secondary syphilis. Additionally, four of these cases were found through intensive DIS intervention activities. As a result of this outbreak the Manhattan/Riley County DIS was reassigned to Wichita from October 8 through 12 to assist local DIS in intensive interviewing of patients and investigation of sexual partners and social networks. All 10 cases were reinterviewed during this time period. Thirty-eight sexual partners and suspects/associates to these cases were initiated for field investigation. Twelve of the sexual partners and suspects/associates were preventatively treated for syphilis. Additionally, local laboratories were contacted and notified of the syphilis outbreak and arrangements were made for the lab to call all reactive serologies for syphilis immediately to the local DIS. Due in part to these efforts, there have been no new cases of early syphilis associated with this social network for over three months.

* See Figure 4, page 10
** See Map on page 12

Remaining Syphilis Cases

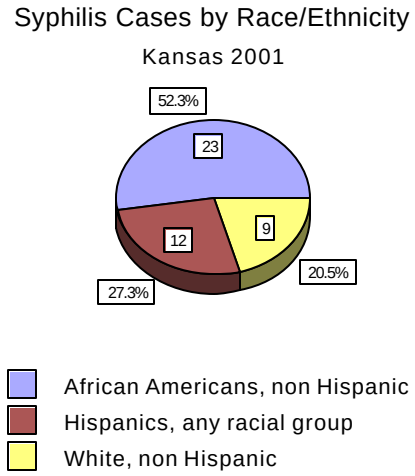
Fifteen cases were reported throughout the remainder of Kansas, with four of the cases reported in Finney County. Through intensive investigation and epidemiology it was determined that all four cases probably were infected outside of the United States in Central America. Four early syphilis cases were reported in Wyandotte county and two cases were reported in Sedgwick County that were not apparently related to the June-September outbreak. Leavenworth, Johnson, Douglas, Osage, and Stevens counties each reported one case of early syphilis not related to the two outbreaks.

Analysis of Syphilis Cases

The male to female ratio of the 44 cases in Kansas was (23/21) 1:0.9. In the Topeka outbreak it was (9/10) 0.9:1 and the Wichita outbreak was (5/5) 1:1. These ratios generally indicate

that syphilis in Kansas and specifically both outbreaks were associated with heterosexual sex. Only one case (in Douglas County) reported same sex partners.

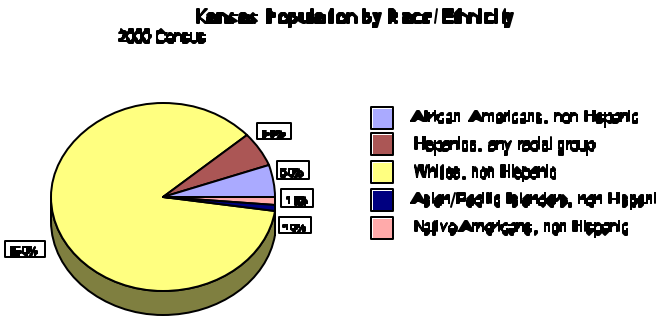
The median age of an individual infected with early syphilis was 27 years of age and the age range was 16 to 53 years of age. There was a significant difference between the mean age of male and female cases in the Wichita outbreak with males 30 years of age compared to 20 years of age for females. The difference in the mean age in the Topeka outbreak was not significant, with males 34 years of age compared to 32 years of age for females. The significant age difference in Wichita mirrors past urban outbreaks in Kansas City and Wichita where crack cocaine and sex for drugs/money were involved.



In Kansas, minorities historically have been disproportionately impacted by syphilis. African Americans and Hispanics accounted for 52% and 27% of reported early syphilis cases respectively in 2001 as shown in Figure 1. African Americans and Hispanics each comprise 6% of the state's population, therefore, the rate of infection among African Americans was 14.7 cases per 100,000* (23) and Hispanics was 9.0 cases per 100,000* (12). This is in comparison to 0.3 cases per 100,000* (9) rate of infection for Whites.

* total population

Figure 1



n = 44

n = 2,688,418

Co-Factors for Syphilis

The risk factor for syphilis is unprotected sex with an infected person. Co-factors to this risk in Kansas have historically been illicit drug use, sex for drugs/money and incarceration within the last 12 months. Other co-factors that have been associated with early syphilis cases in Kansas in recent years have been homelessness, travel outside Kansas, and membership in gangs. In both outbreaks and all the early syphilis cases reported in Kansas during 2001 the only co-factors disclosed were illicit drug uses (19 cases), sex for drugs/money (12 cases) and incarceration within the last 12 months (20 cases).

Source of Reports

The reporting sources for syphilis cases in Kansas have historically been public clinics. In 2001 this trend is continued as 34 of the 44 cases of early syphilis (77%) were reported from public clinics.

Types of Case Referral

DIS referred 20 of the 44 new early syphilis cases into care for examination and treatment. Fourteen new cases referred themselves into care. While the remaining 10 cases were detected from screening: 6 prenatal, 1 family planning, 1 mental health, 1 blood bank and 1 delivery.

Congenital Syphilis

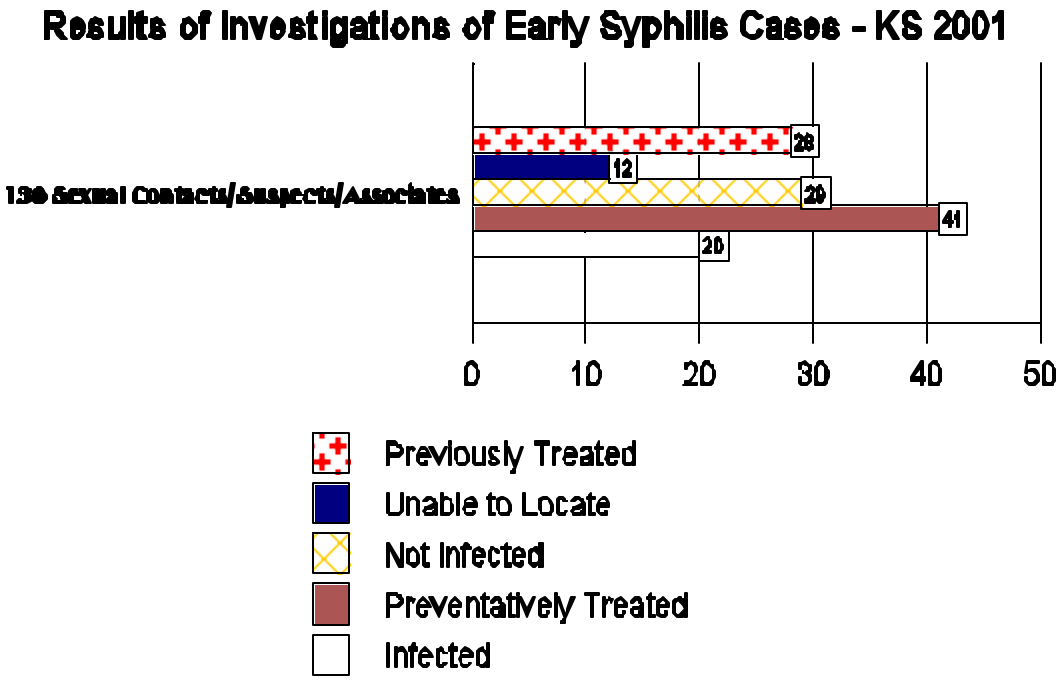
Seven pregnant females were diagnosed with early syphilis in 2001. Kansas Statute 65-153f states, "Each physician or other person attending a pregnant woman in this state during gestation, with the consent of such woman, shall take or cause to be taken a sample of blood of such woman within 14 days after diagnosis of pregnancy is made. Such sample shall be submitted for serological tests which meet the standards recognized by the United States Public Health Service for the detection of syphilis . . . ". As a result of this statute six of the seven early cases of syphilis were identified and treated. Five of the six were treated early in their pregnancies. One did not seek prenatal care until later in her pregnancy, therefore treatment was administered in her third trimester. Infants delivered by mothers that are treated late in pregnancy fit CDC's case definition for presumptive congenital syphilis. The seventh case was not detected until birth because prenatal care was not sought or received and therefore neither she nor her infant were identified and treated until after she delivered. Both of these newborns met the case definition for presumptive congenital syphilis, but neither had any signs or symptoms of disease.

Sexual Partner/Cluster Analysis

All 44 early syphilis cases were interviewed and reinterviewed. Interviews were conducted in the most convenient and confidential settings for the patient. Thirteen cases (30%) received their initial interview in the field (home 5, correctional facility 4, work 3, parking-lot 1). The other 31 cases were initially interviewed in clinic settings. Reinterviews are conducted whenever additional information is needed and as often as needed. Reinterviewing produced seven additional sexual partners. Three of

these sexual partners were preventatively treated and the other four were not infected. A total of 123 sexual partners were elicited during all interviews and there was enough locating information on 93 to be initiated for field investigations. Nineteen of the 93 sexual partners initiated for field investigation were found to be new early syphilis cases, eleven of which had primary or secondary symptoms. Thirty-one of the 93 sex partners were preventatively treated for syphilis (individuals at risk for developing syphilis because of sexual contact with a case within the last 90 days). Additionally, 37 individuals within the social networks of the syphilis cases were investigated as suspects or associates (not sex partners but people with similar risk behaviors) and one was found to be a new early case of syphilis. Additionally, 10 of these individuals were preventatively treated for syphilis. Figure 2 illustrates the dispositions of all sexual partners/suspects/associates.

Figure 2



Date of Diagnosis

The outbreak in Topeka was spread out across the year with no more than 3 cases (16%) in any two-week period. Eleven of the first 22, two-week, time periods had at least one new syphilis case reported in it. The Wichita outbreak occurred within a total of eighteen weeks. Six (60%) of the ten cases were reported within ten weeks of the first report. Figures 3 and 4 are illustrations of the time lines for the two outbreaks.

Conclusions

In Kansas during 2001, aggressive actions of DIS facilitated the end of two syphilis outbreaks. The overall efforts were enhanced by creative interventions including targeted outreach in communities where the outbreaks arose. The nature of these outbreaks were similar to what has occurred in other areas of the country in the last two years that led to sustained increases of syphilis in some areas of the country. However, the relatively quick recognition of the potential of the outbreaks in conjunction with aggressive and persistent disease intervention activities contributed significantly in stopping the outbreaks in Kansas.

Figure 3 Topeka Outbreak n=19

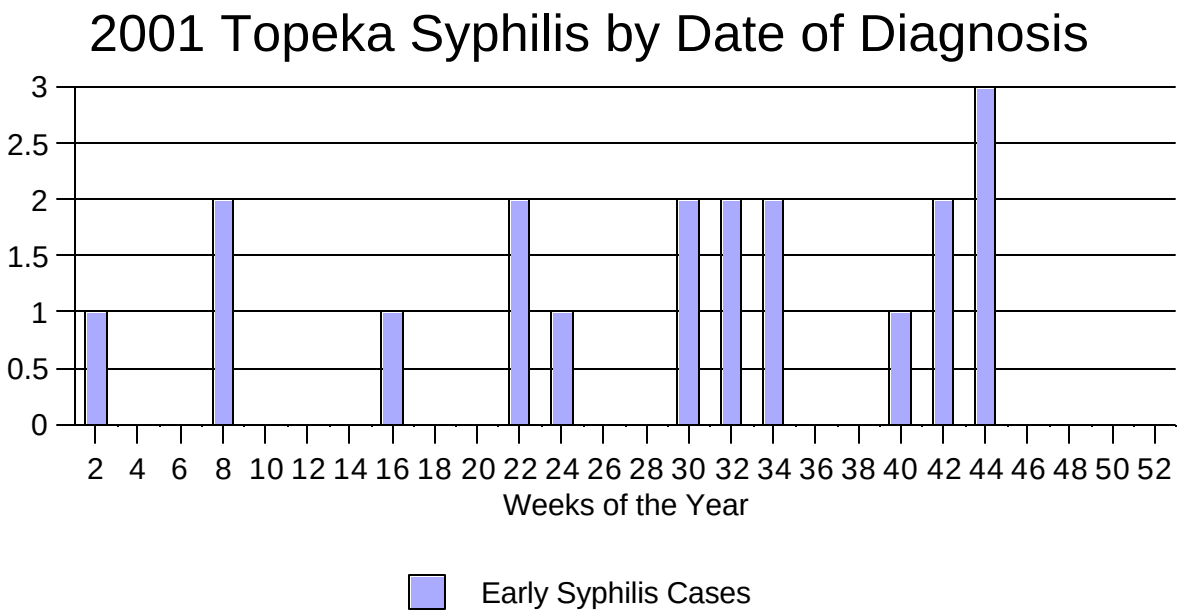


Figure 4 Wichita Outbreak n=10